

## CLAIMS

### WHAT IS CLAIMED IS:

- 1               1. A milking teat cup comprising:  
2                      a structural container component defining a shell;  
3                      a liner component configured to be mounted in the structural  
4                      container component; and  
5                      an applicator integral with the shell and configured to apply  
6                      fluid in a horizontal plane and inward fashion at the top of the shell.
- 1               2. The teat cup of Claim 1, wherein the applicator  
2                      provides a substantially planar flow pattern, whereby circumferential  
3                      application of the fluid on a teat received by the shell is maximized.
- 1               3. The teat cup of Claim 1, wherein the liner component  
2                      comprises a ring-formed or mechanically-created exterior opening  
3                      mouthpiece.
- 1               4. The teat cup of Claim 1, wherein the liner component  
2                      comprises a mold-formed exterior opening mouthpiece.
- 1               5. The teat cup of Claim 1, wherein the liner component  
2                      does not function in a milking action without the applicator.
- 1               6. The teat cup of Claim 1, further comprising a locking  
2                      mechanism to secure the applicator to the shell.
- 1               7. The teat cup of Claim 1, wherein the applicator is  
2                      integral to the perimeter of the top opening of the shell.

1               8.     The teat cup of Claim 1, wherein the fluid comprises  
2     teat skin disinfectant and/or skin conditioner.

1               9.     The teat cup of Claim 1, wherein the applicator  
2     comprises a plurality of orifices.

1               10.    A milking teat cup configured to apply a fluid  
2     treatment to a teat immediately after milking of the teat is completed by  
3     providing a substantially planar pattern flow of the fluid treatment across  
4     the top of the teat cup, the teat cup comprising:

5               a shell having a top opening for receiving a teat and a  
6     bottom connection coupled to a milk receiving device;

7               a liner located within the shell and having an open  
8     mouthpiece located proximate to the top opening of the shell; and

9               an applicator with discharge nozzles located along a  
10    perimeter proximate to the top opening of the shell, the applicator  
11    providing fluid treatment through the discharge nozzles to the teat  
12    received by the shell at a horizontal plane to the top opening of the shell.

1               11.    The teat cup of Claim 10, wherein the liner has a ring-  
2     formed or mechanically created exterior mouthpiece.

1               12.    The teat cup of Claim 12, wherein the liner has a  
2     mold-formed exterior opening mouthpiece.

1               13.    The teat cup of Claim 10, wherein the applicator is  
2     removable from the shell.

1               14.    The teat cup of Claim 10, further comprising a locking  
2     mechanism to secure the applicator to the liner component.

1               15. The teat cup of Claim 10, wherein the liner comprises  
2       an extension along the mouthpiece, the extension defining a seal with the  
3       shell.

1               16. The teat cup of Claim 10, wherein the applicator has  
2       multiple discharge nozzles evenly spaced apart from each other.

1               17. A combination milking and applicator device  
2       comprising:  
3                 a flexible milking sleeve having a shape for insertion of a  
4       teat;  
5                 an inflexible shell surrounding the flexible milking sleeve and  
6       providing for a vacuum space between the flexible milking sleeve and the  
7       inflexible shell; and  
8                 an applicator component around openings of the flexible  
9       milking sleeve and the inflexible shell, the applicator component being  
10      configured to dispense fluid over openings of the flexible milking sleeve  
11      and the inflexible shell.

1               18. The device of Claim 17, wherein the applicator  
2       component discharges fluid at a teat in the openings of the flexible  
3       milking sleeve and the inflexible shell.

1               19. The device of Claim 17, wherein the applicator  
2       component facilitates a coating and wiping action of disinfectant on the  
3       teat.

1               20. The device of Claim 17, wherein the applicator  
2       component is integral to the flexible milking sleeve.

1                   21. The device of Claim 17, wherein the applicator  
2 component comprises an elastomeric material.

1                   22. The device of Claim 17, wherein the applicator  
2 component comprises discharge nozzles.

1                   23. A milking system including a combination milking and  
2 applicator device, the milking system comprising:

3                         a plurality of teat cups, the teat cups including applicators  
4 integrally attached thereto, the applicators being configured to apply fluid  
5 in a horizontal plane and inward fashion across a top of the teat cups;  
6                         a valve manifold coupled to the teat cup applicators, the  
7 valve manifold controlling flow of fluid to the applicators; and  
8                         a controller including logic configured to provide control  
9 signals to the valve manifold, the controller signaling the valve manifold to  
10 pre-charge a hose delivering fluid to the applicator and signaling the valve  
11 manifold for end of milking and begin delivery of the fluid from the  
12 applicator.

1                   24. The milking system of Claim 23, further comprising an  
2 applicator control valve coupled between the valve manifold and the  
3 number of teat cups.

1                   25. The milking system of Claim 24, wherein the  
2 applicator control valve comprises a safety valve comprising a discharge  
3 orifice.

1                   26. The milking system of Claim 23, wherein the pre-  
2 charge of the hose delivering fluid to the applicator dispenses 10 mL or  
3 less of fluid to the hose.

1               27. The milking system of Claim 23, wherein the  
2 applicators comprise multiple discharge nozzles evenly spaced apart from  
3 each other.

1               28. The milking system of Claim 23, wherein the number  
2 of teat cups is more than one.

1               29. The milking system of Claim 23, further comprising a  
2 plurality of valve manifolds and a plurality of controllers.

1               30. The milking system of Claim 29, further comprising a  
2 power supply coupled to the controllers.

1               31. A milking method including a combination milking and  
2 applicator device, the milking method comprising:

3               commencing a milking session in which milk is delivered from  
4 animal teats engaged by teat cups;

5               pre-charging a fluid line coupled to the teat cups with a  
6 disinfectant and/or conditioning fluid;

7               terminating the milking session; and

8               dispensing the disinfectant and/or conditioning fluid from the  
9 fluid line out of applicators in the teat cups, the dispensing commencing  
10 when the number of teat cups begin to disengage from the animal teats.

1               32. The milking method of Claim 31, further comprising  
2 applying a water flush or drying air to the applicator after the disinfectant  
3 and/or conditioning fluid is dispensed.

1               33. The milking method of Claim 31, wherein the  
2 disinfectant and/or conditioning fluid comprises a disinfectant,  
3 conditioning, and/or cleaning component.

1           34. The milking method of Claim 31, wherein the  
2 applicators apply the disinfectant and/or conditioning fluid in a horizontal  
3 plane and inward fashion across a top of the teat cups.

1           35. The milking method of Claim 31, wherein pre-charging  
2 a fluid line coupled to the number of teat cups with a disinfectant and/or  
3 conditioning fluid comprises dispensing 10 mL or less of disinfectant  
4 and/or conditioning fluid in the fluid line without dispensing the fluid out  
5 the applicators to the teat cups.